DETAILED ACTION

1. This Office Action is in response to the response filed on 11/04/2009.

Specification

2. The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

Arrangement of the Specification

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

(a) TITLE OF THE INVENTION.
(b) CROSS-REFERENCE TO RELATED APPLICATIONS.
(c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.
(d) THE NAMES OF THE PARTIES TO A JOINT RESEARCH AGREEMENT.
(e) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC.
(f) BACKGROUND OF THE INVENTION.
    (1) Field of the Invention.
    (2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.
(g) BRIEF SUMMARY OF THE INVENTION.
(h) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).
(i) DETAILED DESCRIPTION OF THE INVENTION.
(j) CLAIM OR CLAIMS (commencing on a separate sheet).
(k) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).
(l) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence Listing" is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence Listing" is not submitted as an electronic document on compact disc).

Drawings

3. The drawings are objected to under 37 CFR 1.83(a). **The drawings must show every feature of the invention specified in the claims.** Therefore, "the converter and the device adapted to sense current and arranged inside the converter" recited in claim 8, "the analog-to-digital converter is integrated in one of a microcontroller and a microprocessor" recited in claim 9 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 8-10, 12-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's Admitted Prior Art (AAPA) in view of Zafarana et al (USP 6,078,203).

Regarding claim 8: AAPA **(For example: see Specification, lines 5-13 of page 1)** discloses a converter comprising: a device **(current sensing means)** adapted to sense currents fed to an electric motor powered by the converter, the device arranged inside the converter, an additional filter that is connected to an analog-to-digital converter.

AAPA does not disclose a nonlinear filter and output signals of nonlinear filter are fed to an additional filter. Zafarana et al **(For example: see FIG 3)** teaches the output signals of a nonlinear filter **(7)** are fed to a linear filter **(2)**. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify converter in the motor control system of AAPA to include the nonlinear filter by Zafarana et al, for the purpose of controlling gain of the transmitted signals within desired values **(Zafarana et al, Abstract)**.

Additionally, since AAPA and Zafarana et al are both from the same field of endeavor **(power control system)**, the purpose disclosed by Zafarana et al would have been recognized in the pertinent art of AAPA.

Regarding claim 9: AAPA **(For example: see FIG 1)** discloses the analog-to-digital converter **(page 2, lines 28-31)** is integrated in one of (a) a microcontroller and (b) a microprocessor **(2) (item 2 of FIG 1 and item 2 of FIG 2 are not different because they are labeled the same; applicant argued on page 3 of Applicant Arguments/Remarks that a microprocessor can include an integrated analog to digital converter; it is also well known in the art to have analog to digital converter included in microprocessor)**.

Regarding claim 10: AAPA fails to disclose the nonlinear filter includes a run-up transmitter. Zafarana et al **(For example: see FIG 1)** teaches the nonlinear filter includes a run-up transmitter **(integrator 8; transmitter is a device for transmitting signals, integrator 8 has input error signal ERR and output signal ERRm therefore it is considered as a device for transmitting signals)** ***(same reason for combination as in claim 8)***.

Regarding claim 12: AAPA **(For example: see Specification, lines 5-13 of page 1)** discloses the additional filter includes a low-pass filter.

Regarding claim 13: AAPA in view of Zafarana et al discloses the claimed invention except for a value corresponding to a rated current of the converter is attainable for the run-up transmitter in a time between 5 and 10 μs. It would have been obvious to one having ordinary skill in the art at the time the invention was made to achieve a value corresponding to a rated current of the converter for the

run-up transmitter in a time between 5 and 10 μs, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F. 2d 272, 205 USPQ 215 (CCPA 1980).

Regarding claim 14: AAPA in view of Zafarana et al discloses the claimed invention except for the PT1 filter has a time constant having a value one of (a) between 15 and 25 μs and (b) approximately 20 μs. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the PT1 filter with a time constant having a value one of (a) between 15 and 25 μs and (b) approximately 20 μs, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233. It has also been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F. 2d 272, 205 USPQ 215 (CCPA 1980).

6. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's Admitted Prior Art (AAPA) in view of Zafarana et al (USP 6,078,203) and further in view of Goldberg (USP 3,714,470).

Regarding claim 11: AAPA in view of Zafarana et al discloses claimed invention except for the run-up transmitter including a comparator and an integrator. Goldberg **(For example: see FIG 1)** teaches the run-up transmitter **(Variable Duty Cycle Signal Generator)** including a comparator **(16)** and an integrator **(14)**. It would have been obvious to one having ordinary skill in the art

at the time the invention was made to modify the motor control system of AAPA to include the run-up transmitter including a comparator and an integrator of Goldberg for the purpose of maintaining linear change of output signal in triangular shape **(Goldberg, Abstract)**.

Additionally, since AAPA, Zafarana et al, and Goldberg are all from the same field of endeavor **(power control system)**, the purpose disclosed by Goldberg would have been recognized in the pertinent art of AAPA and Zafarana et al.

Response to Arguments

7. Applicant's arguments filed 11/04/2009 have been fully considered but they are not persuasive.

First, applicant argued that Zafarana lacks any disclosure relating to an electric motor powered by the presently claimed convertor that includes a device adapted to sense currents fed to the electric motor. Rather, Zafarana discloses a voltage regulator, which has a linear filter, a comparator, and a stretcher filter, connected in cascade with one another between an input terminal and an output terminal of the regulator. However, applicant acknowledges that Figure 3 of Zafarana discloses output signals from a nonlinear filter are fed to a linear filter in an automotive alternator. Applicant does not disagree that AAPA discloses an electric motor powered by a converter that has a device adapted to sense currents fed to electric motor. It is well known in the art that alternator is a device to generate AC current and it can be converted into a motor, it is also well known

in the art that motor is used as AC current generator. One of ordinary skill in the art should know to exclude the comparator and stretcher filter as well as perform other necessary adjustments to combine AAPA and Zafarana into a working system comprising a converter with current sensing device to sense current fed to an electric motor powered by the converter, signals of the device are fed to a nonlinear filter, output signals of the nonlinear filter are fed to an additional filter that is connected to an analog-to-digital converter.

Second, applicant argued that one of ordinary skill in the art following the disclosure of Zafarana would not connect the output of the disclosed linear filter 2 to an analog-to-digital converter. However, AAPA discloses linear filter connected to analog-to-digital converter. Zafarana discloses nonlinear filter connected to linear filter. One of ordinary skill in the art should know to exclude the comparator and stretcher filter of Zafarana because they do not serve the purpose of converting analog signal into digital signal. Analog-to-digital converter is well known in the art, it would have been obvious to one having ordinary skill in the art to make necessary adjustment to connect the analog to digital converter to the output of linear filter to convert analog signal from the linear filter into digital signal.

Conclusion

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Emily Pham whose telephone number is (571)270-3046. The examiner can normally be reached on Mon-Thu (7:00AM - 6:00PM).

Contact Information

9. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Monica Lewis can be reached on (571) 272 - 1838. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

January 2010

/Monica Lewis/
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